

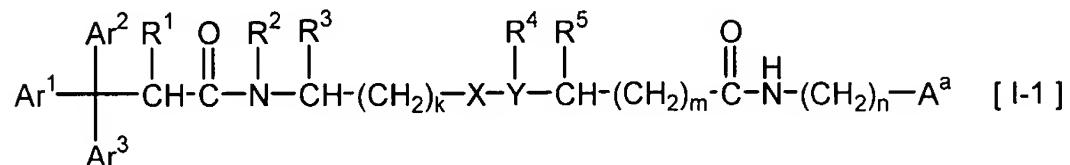
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ACCOUNT NO. 23-0925

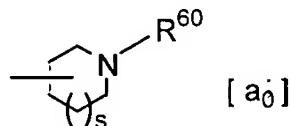
AMENDMENTS TO THE CLAIMS.

Claims 1-19 (Cancelled)

Claim 20 (Currently Amended) A process for producing a compound represented by the general formula [I-1]:



fin in which A^a stands for a group of the formula $[a_0]$

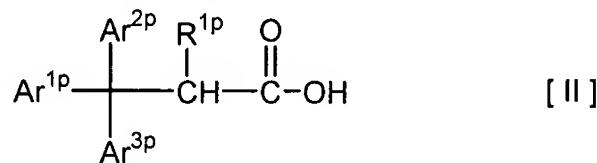


Ar¹, Ar² and Ar³ each independently independently stands for optionally substituted phenyl, the substituent being selected from the group consisting of halogen, hydroxyl, lower alkyl, lower alkenyl, lower alkoxy, carbamoyl, lower alkylcarbamoyl and di-lower alkylcarbamoyl; R¹ stands for hydrogen or optionally substituted lower alkyl, the substituent being selected from the group consisting of hydroxyl, amino, carbamoyl, lower alkylcarbamoyl, di-lower alkylcarbamoyl and imidazolyl;

R^2 , R^3 , R^4 and R^5 each independently stands for hydrogen or optionally substituted lower alkyl, the substituent being selected from the group consisting of hydroxyl, amino, carbamoyl, lower alkylcarbamoyl, di-lower alkylcarbamoyl and imidazolyl, or R^2 and R^3 , or R^4 and R^5 , may together stand for, independently of each other, optionally substituted trimethylene, propenylene, tetramethylene or 2-butylene group, the substituent being selected from the group consisting of oxo, hydroxyl, amino, lower alkoxy, lower alkanoyloxy, lower alkylamino, di-lower alkylamino, (imino-lower alkyl)amino, lower alkanoylamino, lower alkoxycarbonylamino, (lower alkylcarbamoyl)amino, lower alkylsulfonylamino, guanidino, lower alkoxycarbonyl, carbamoyl, lower

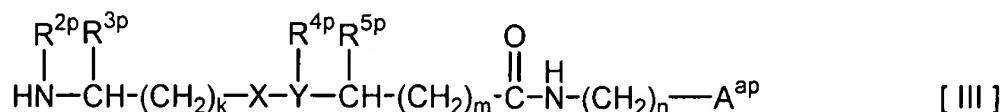
alkylcarbamoyl, di-lower alkylcarbamoyl, imidazolyl and a group represented by $-R^7$, R^7 standing for optionally substituted lower alkyl, the substituent being selected from the group consisting of hydroxyl, amino, carbamoyl, lower alkylcarbamoyl, di-lower alkylcarbamoyl, lower alkoxy carbonyl and imidazolyl; R^{60} stands for hydrogen, C_1-C_{10} alkyl, lower alkenyl, cycloalkyl, cycloalkyl-lower alkyl whose ring portion may be substituted with lower alkyl, cycloalkenyl-lower alkyl or aralkyl; and k , m , n , s , X and Y have later defined significations] significations

or salts thereof, which comprises reacting carboxylic acid of the general formula [II]:

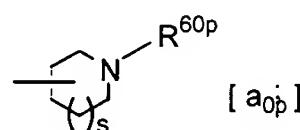


in which Ar^{1p} , Ar^{2p} and Ar^{3p} each independently stands for optionally substituted phenyl, the substituent being selected from the group consisting of halogen, lower alkyl, lower alkenyl, lower alkoxy and di-lower alkylcarbamoyl and optionally protected hydroxyl, carbamoyl and lower alkylcarbamoyl; and R^{1p} stands for hydrogen or optionally substituted lower alkyl, the substituent being selected from the group consisting of di-lower alkylcarbamoyl, optionally protected hydroxyl, amino, carbamoyl, lower alkylcarbamoyl and imidazolyl groups} groups

or salt or reactive derivative thereof with a compound of the general formula [III]:

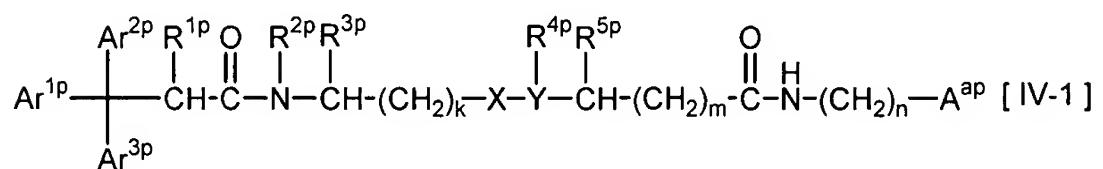


fin in which A^{ap} stands for a group of the formula $[a_{op}]$



k means 0 or 1; m, n and s each independently means 0, 1 or 2; R^{2p}, R^{3p}, R^{4p} and R^{5p} each independently stands for hydrogen or optionally substituted lower alkyl, the substituent being selected from the group consisting of di-lower alkylcarbamoyl and optionally protected hydroxyl, amino, carbamoyl, lower alkylcarbamoyl and imidazolyl groups, or R^{2p} and R^{3p}, or R^{4p} and R^{5p}, together form, each independently of the other pair, optionally substituted trimethylene, propenylene, tetramethylene or 2-butenylene, the substituent being selected from the group consisting of lower alkoxy, lower alkanoyloxy, di-lower alkylamino, lower alkoxycarbonyl, di-lower alkylcarbamoyl, a group represented by -R^{7p} and optionally protected oxo, hydroxyl, amino, lower alkylamino, (imino-lower alkyl)amino, lower alkanoylamino, lower alkoxycarbonylamino, (lower alkylcarbamoyl)amino, lower alkylsulfonylamino, guanidino, carbamoyl, lower alkylcarbamoyl and imidazolyl groups; R^{7p} stands for optionally substituted lower alkyl, the substituent being selected from the group consisting of di-lower alkylcarbamoyl and lower alkoxycarbonyl, and optionally protected hydroxyl, amino, carbamoyl, lower alkylcarbamoyl and imidazolyl groups; R^{60p} stands for imino-protecting group, C₁-C₁₀ alkyl, lower alkenyl, cycloalkyl, cycloalkyl-lower alkyl whose ring portion being optionally substituted with lower alkyl, cycloalkenyl-lower alkyl or aralkyl; X stands for carbonyl or methylene; and Y stands for nitrogen or methine} methine

or a salt thereof to form a compound represented by the general formula [IV-1]

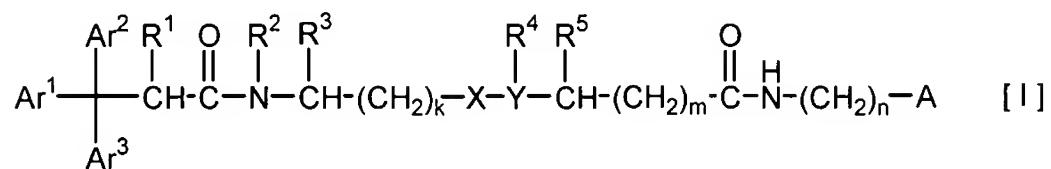


in which A^{ap}, Ar^{1p}, Ar^{2p}, Ar^{3p}, k, m, n, R^{1p}, R^{2p}, R^{3p}, R^{4p}, R^{5p}, X and Y have the above significations} significations

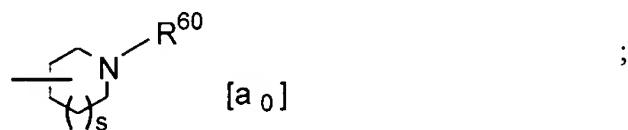
or a salt thereof, and if necessary removing the protective group(s).

Claims 21-24 (Cancelled)

Claim 25 (New) Compounds which are represented by the following general formula [I]



in which A stands for a group of the following formula $[a_0]$

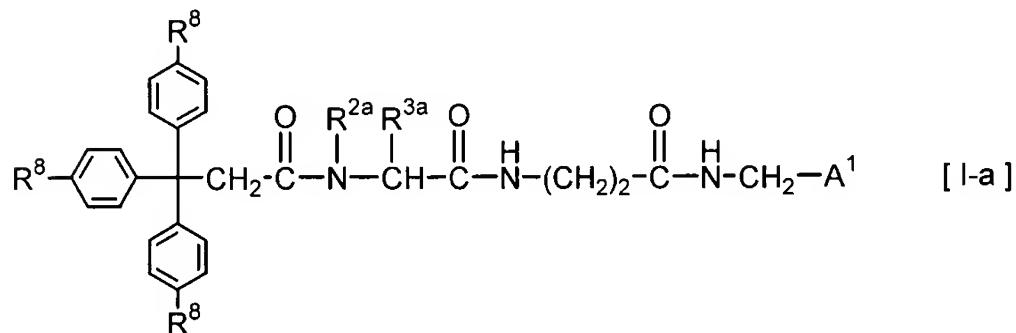


Ar^1 , Ar^2 and Ar^3 each independently stands for optionally substituted phenyl, the substituent being selected from the group consisting of halogen, hydroxyl, lower alkyl, lower alkenyl, lower alkoxy, carbamoyl, lower alkylcarbamoyl and di-lower alkylcarbamoyl; k means 0 or 1; m and n each independently means 0, 1 or 2 ; s means 1; R^1 stands for hydrogen or optionally substituted lower alkyl, the substituent being selected from the group consisting of hydroxyl, amino, carbamoyl, lower alkylcarbamoyl, di-lower alkylcarbamoyl and imidazolyl; R^2 , R^3 , R^4 and R^5 each independently stands for hydrogen or optionally substituted lower alkyl, the substituent being selected from the group consisting of hydroxyl, amino, carbamoyl, lower alkylcarbamoyl, di-lower alkylcarbamoyl and imidazolyl, or R^2 and R^3 , or R^4 and R^5 , may together stand for, independently of each other, optionally substituted trimethylene, propenylene, tetramethylene or 2-butenylene group, the substituent being selected from the group consisting of oxo, hydroxyl, amino, lower alkoxy, lower alkanoyloxy, lower alkylamino, di-lower alkylamino, (imino-lower alkyl)amino, lower alkanoylamino, lower alkoxycarbonylamino, (lower alkylcarbamoyl)amino, lower alkylsulfonylamino, guanidino, lower alkoxycarbonyl, carbamoyl, lower alkylcarbamoyl, di-lower alkylcarbamoyl, imidazolyl and a group represented by $-\text{R}^7$, R^7 standing for optionally

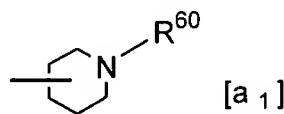
substituted lower alkyl, the substituent being selected from the group consisting of hydroxyl, amino, carbamoyl, lower alkylcarbamoyl, di-lower alkylcarbamoyl, lower alkoxy carbonyl and imidazolyl; R⁶⁰ stands for hydrogen, C₁-C₁₀ alkyl, lower alkenyl, cycloalkyl, cycloalkyl-lower alkyl whose ring portion may be substituted with lower alkyl, cycloalkenyl-lower alkyl or aralkyl; X stands for carbonyl or methylene; and Y stands for nitrogen or methane or salts thereof.

Claim 26 (New) The compounds according to Claim 25, in which Ar¹, Ar² and Ar³ each independently stands for phenyl which is optionally substituted with halogen or lower alkyl; n is 1 or 2; s is 1; and R¹ is hydrogen.

Claim 27 (New) The compounds according to Claim 26, which are represented by the general formula [I-a]:



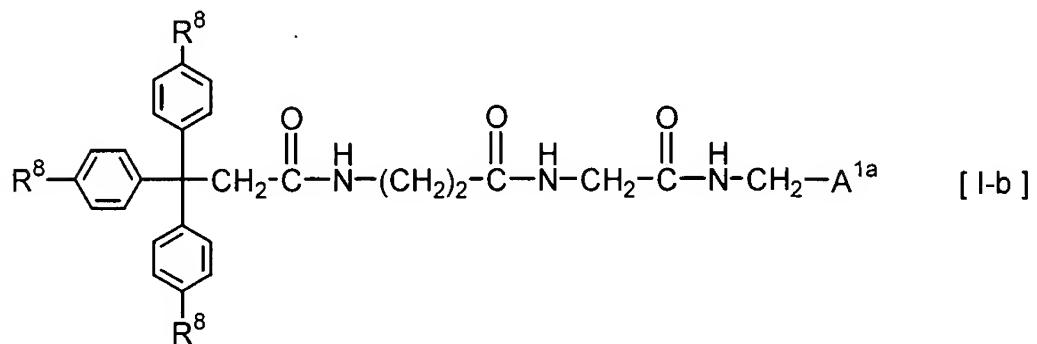
wherein A¹ stands for a group represented by the formula [a₁]



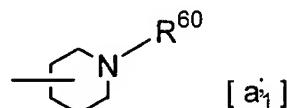
R^{2a} and R^{3a} each independently stands for hydrogen, or optionally substituted lower alkyl, the substituent being selected from hydroxyl, amino, carbamoyl, lower alkylcarbamoyl, di-lower alkylcarbamoyl and imidazolyl; R⁸ stands for hydrogen, halogen or lower alkyl; and R⁶⁰ stands for hydrogen, C₁-C₁₀ alkyl,

lower alkenyl, cycloalkyl, cycloalkyl-lower alkyl whose ring portion may be substituted with lower alkyl, cycloalkenyl-lower alkyl or aralkyl.

Claim 28 (New) The compounds according to Claim 26, which are represented by the general formula [I-b]:

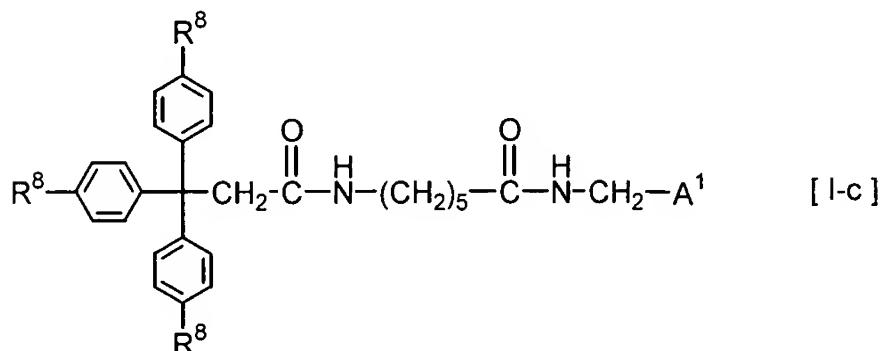


wherein A^{1a} stands for a group of the formula $[a_1]$

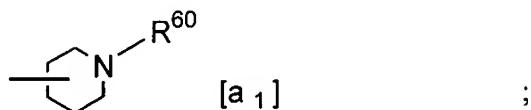


R^8 stands for hydrogen, halogen or lower alkyl; and R^{60} stands for hydrogen, C_1-C_{10} alkyl, lower alkenyl, cycloalkyl, cycloalkyl-lower alkyl whose ring portion may be substituted with lower alkyl, cycloalkenyl-lower alkyl or aralkyl.

Claim 29 (New) The compounds according to Claim 26, which are represented by the general formula [I-c]:

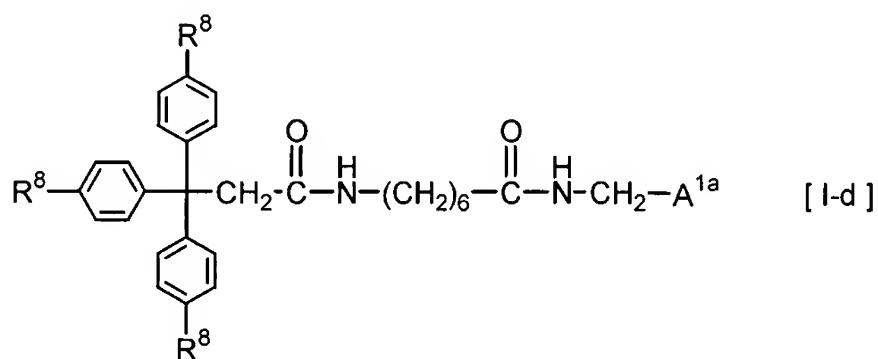


in which A^1 stands for a group represented by the formula [a₁]

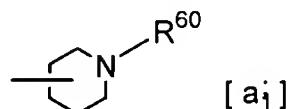


R^8 stands for hydrogen, halogen or lower alkyl; and R^{60} stands for hydrogen, C_1 - C_{10} alkyl, lower alkenyl, cycloalkyl, cycloalkyl-lower alkyl whose ring portion may be substituted with lower alkyl, cycloalkenyl-lower alkyl or aralkyl.

Claim 30 (New) The compounds according to Claim 26, which are represented by the general formula [I-d]

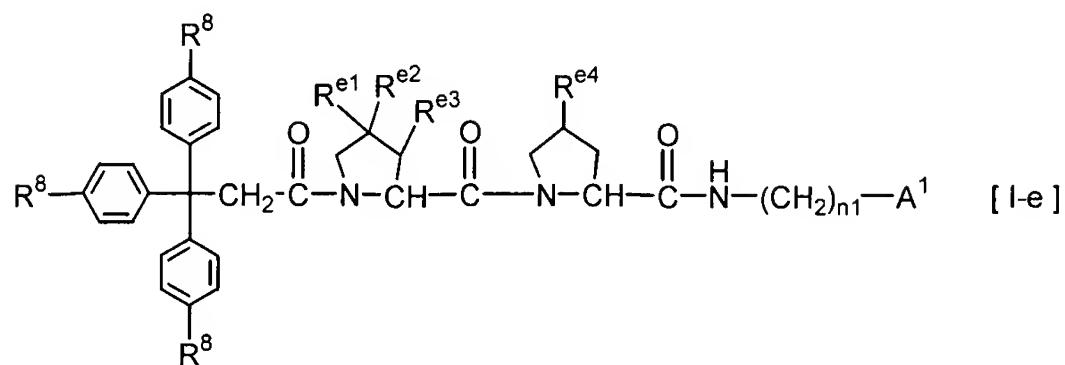


in which A^{1a} stands for a group of the formula [a₁]

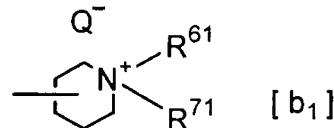
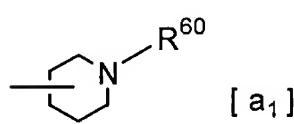


R^8 stands for hydrogen, halogen or lower alkyl; R^{60} stands for hydrogen, C_1 - C_{10} alkyl, lower alkenyl, cycloalkyl, cycloalkyl-lower alkyl whose ring portion may be substituted with lower alkyl, cycloalkenyl-lower alkyl or aralkyl.

Claim 31 (New) The compounds according to Claim 26, which are represented by the general formula [I-e]



in which A¹ stands for a group represented by the formula [a₁]



n1 stands for 1 or 2; R^{e1}, R^{e2}, R^{e3} and R^{e4} each independently stands for hydrogen, hydroxyl, amino, lower alkoxy, lower alkanoyloxy, lower alkylamino, di-lower alkylamino, (imino-lower alkyl)amino, lower alkanoylamino, lower alkoxy carbonylamino, (lower alkylcarbamoyl)amino, lower alkylsulfonylamino, guanidino, lower alkoxy carbonyl, carbamoyl, lower alkylcarbamoyl, di-lower alkylcarbamoyl, imidazolyl and a group represented by -R⁷; or R^{e1} and R^{e2} together signify oxo group; R⁷ stands for optionally substituted lower alkyl, the substituent being selected from the group consisting of hydroxyl, amino, carbamoyl, lower alkylcarbamoyl, di-lower alkylcarbamoyl, lower alkoxy carbonyl and imidazolyl; R⁸ stands for hydrogen, halogen or lower alkyl; and R⁶⁰ stands for hydrogen, C₁-C₁₀ alkyl, lower alkenyl, cycloalkyl, cycloalkyl-lower alkyl whose ring portion may be substituted with lower alkyl, cycloalkenyl-lower alkyl or aralkyl.

Claim 32 (New) The compounds according to Claim 31, in which R^{e1} is hydrogen or hydroxyl, and all of R^{e2} , R^{e3} and R^{e4} are hydrogen.

Claim 33 (New) The compounds according to any one of claims 25 to 32, in which R^{60} is hydrogen, C_1 - C_{10} alkyl, cycloalkyl or cycloalkyl-lower alkyl whose ring portion may be substituted with lower alkyl.

Claim 34 (New) The compounds according to Claim 33, in which said C_1 - C_{10} alkyl as R^{60} is methyl, ethyl, propyl, isopropyl, butyl, isobutyl, pentyl, 2-methylbutyl, hexyl, 2-methylpentyl, heptyl, octyl or decyl.

Claim 35 (New) The compounds according to Claim 33, in which said cycloalkyl group as R^{60} is cyclopentyl or cyclohexyl.

Claim 36 (New) The compounds according to Claim 33, in which said cycloalkyl-lower alkyl whose ring portion may be substituted with lower alkyl as R^{60} is cyclopropylmethyl, cyclobutylmethyl, 2-(1-methylcyclopropyl)ethyl, cyclopentylmethyl, (2,2-dimethylcyclopentyl)methyl, 1-cyclopentylethyl, cyclohexylmethyl or 1-cyclohexylethyl.

Claim 37 (New) A pharmaceutical composition for the treatment of diseases associated with muscarinic M_3 receptors, which comprises a muscarinic M_3 antagonistically effective amount of compound of formula [I] according to Claim 25 or a salt thereof, and a pharmaceutically acceptable adjuvant.

Claim 38 (New) A method for the treatment of chronic obstructive pulmonary diseases, chronic bronchitis, asthma, chronic respiratory tract obstruction, fibroid lung, pulmonary emphysema and rhinitis; irritable bowel syndrome, convulsive colitis, gastroduodenal ulcer, convulsion or hyperanakinesia of digestive tract, diverticulitis and pain accompanying contraction of smooth muscles of the digestive system; urinary incontinence, urgency and pollakiuria in nervous pollakiuria, neurogenic bladder, nocturnal enuresis, unstable bladder, cystospasm and chronic cystitis; and motion sickness, which comprises administering a muscarinic M_3 antagonistically effective amount of compound of formula [I] according to Claim 25 or a salt thereof to a patient suffering from the diseases.